

◆ Multiple Choice Questions

- 1. Which of the following is best waste disposal technique for medical waste?**
(a) Landfill (b) Incineration
(c) Recycling (d) Disposal in water
- 2. For what type of waste, recycling is best treatment?**
(a) Metallic waste
(b) Medical waste
(c) Agricultural waste
(d) Domestic waste
- 3. Which of the following is main green house gas?**
(a) Hydrogen (b) Carbon monoxide
(c) Carbon dioxide (d) Sulphur dioxide
- 4. Waste generation per capita in big cities of India is :**
(a) 1.2 kg (b) 0.1 to 0.2 kg
(c) 2.4 kg (d) 0.4 to 0.8 kg

Manures can be made from :

- (a) Domestic waste
- (b) Agricultural waste
- (c) From both (a) and (b)
- (d) None of these

Answer

1. (b), 2. (a)*, 3. (c), 4. (d), 5. (c).

Very Short Answer Type Questions

Q.6. How is biogas produced?

Ans. Biogas is a mixture of many gases which is produced by the action of microbes (methanogen) on biological material, like excretery waste of animals, cow dung etc.

Q.7. What is waste?

Ans. Products or by products of any process which are discarded or thrown, considering that there is no use of them.

Q.8. Write the names of green house gases.

Ans. Carbon dioxide
Methane
Nitrous oxide
Chlorofluoro Carbon CFCs

Q.9. What do you mean by vermicompost?

Ans. Compost made with the help of a type of earthworm (redworm) is called vermicompost.

Q.10. Which diseases can be caused by blockage of drains?

Ans. The blockage of drains, create stagnant water condition leading to breeding of different mosquito species. Mosquitoes may cause malaria, dengue, filaria, janpanese encephalitis.

Short Answer Type Questions

Q.11. Explain waste management.

Ans. Disposal of waste is a global problem, therefore, waste management has global significance. This work can be made possible by

coordinated efforts of government machinery, non government organisations (NGOs) and common man.

Following are the important aspects of waste management :

(i) Separate, long term waste disposal master plan should be made for each town and city.

(ii) Separation of biodegradable and non biodegradable waste right from domestic land (in separate bins).

(iii) Establishment of sewage treatment plants and their proper maintenance, for effective sewage treatment.

(iv) To encourage recycling of paper, cardboard, plastic, glass or metallic tins.

(v) Use of biodegradable waste in manufacture of compost or wormicompost.

A part from this appropriately done landfill, incineration, chemical reactions and effective strategies of waste management. A change in the mind set attitude and behaviour of common man is essential for effective waste management. We should stick to the principle of waste management **recycle, reuse and reduce.**

Q.12. What is meant by solid waste?

Ans. That waste which is thrown or discarded from home, offices, school, colleges, hospitals and shops etc. and collected and disposed off by municipality is called solid waste. It includes paper, cardboard, glass bottle, porcelain, plastic, aluminium cans, polythene, rubber, leather particles, food waste etc.

Some unrepairable electronic items, CDs, floppy, nutbolt, tubes, tyres, construction material, dead animals are also included in this category.

This is a cause of visual pollution also.

Q.13. Differentiate between biodegradable and nonbiodegradable wastes.

Ans. Differences between biodegradable and non-biodegradable waste.

S.No.	Biodegradable	Non-biodegradable
1.	Decomposed by biological factors like microbes in nature. Amount is reduced in nature automatically.	Not decomposed by biological factors. Amount does not reduce.
2.	May be a source of infection.	It is not a source of infection.
3.	It emits foul smell. It release green house gases.	Generally do not emit foul odour.
4.	These are waste of plant and animal origin like cow dung, agricultural waste.	These are generally synthetic chemicals made in factories, Industrial waste, pesticides, glass, plastic.

Q.14. What do you mean by landfill?

Ans. Landfill is a method of waste disposal in which the municipal solid waste is dumped in a wasteland or low lying area. It is a mechanically operated process. Large landfill areas are later or covered by mud.

Demerits of Landfill

(i) The rate of waste generation is so high in cities, that landfill areas become insufficient after short period of time.

(ii) Landfill areas are sites or breeding places of many pests and vectors like cockroaches, rats, mosquitoes and many pathogens of infectious diseases.

(iii) Landfill areas emit foul smell and green house gases.

(iv) They may pollute underground water also.

Merits of Landfill

(i) It is a better method for waste management until a setup of alternate method.

(ii) The landfill are later on converted into parks.

Q.15. What is meant by recycling?

Ans. Recycling : Recycling means recovery of a substance. This is one of the best method of waste management. It is also a means of burning evern increasing pollution.

Unnecessary accumulation of waste on our earth can be avoided by recycling. Moreover, the resource in reference is used again and again. Most of the waste can be recycled.

Biodegradable waste can be recycled to make compost. Paper and cardboard can be reproduced by recycling. Therefore, burden on forests can be reduced. In a similar manner metals, glass, plastic etc. can also be recycled easily.

Q.16. For what purpose incineration method is used?

Ans. Incineration : Incineration is a method of waste disposal. Dangerous, infectious waste are generated in hospitals. This type of waste has pathogens of diseases apart from harmful chemicals. This waste, containing pus, blood, tissues etc. needs careful handling and disposal. Incineration is a best method of this type of waste disposal because in this method converts the waste into harmless ashes. Disposal of medical waste by incineration has been made compulsory by the government. By this method the bulk of the waste is reduced substantially. This is a better alternative for small countries also but the process causes release of pollutant gases in the atmosphere.

◆ Essay Type Questions

Q.17. Describe the types of waste.

Ans. Waste : Such products or by products of a process which are discarded considering that they are of no use, and called waste. The waste have been classified in various ways.

On the basis of their physical state they are of following types :

(a) Solid wastes : Those domestic or community/municipal waste which are collected and disposed off by municipality are called municipal solid waste. Paper, cardboard, polythene, plastic, metal, computer CDs, nutbolt, rubber etc. are included in this category.

(b) **Liquid waste** : Sewage is an example of liquid waste. Liquid effluents of factories, hot water etc. are other examples of this waste.

(c) **Gaseous waste** : Gases released into atmosphere by industries, burning of fuel etc.

On the basis of degradability of the waste in nature it is of following two types :

(i) **Biodegradable waste** : Waste which is decomposed in nature by biological factors (microbes) is called biodegradable waste. Waste of plant or animal origin belong to this category.

(ii) **Non biodegradable waste** : These waste are not decomposed by microbes in nature. Waste which take very long time in decomposition are also included in this category. Such waste keep on increasing nature. For example plastic polythene, glass, metals, some synthetic chemicals, like pesticides etc. are included in this category.

In addition to these other categories of waste are radioactive waste, e-waste etc.

Q.18. Write an essay on waste management.

Ans. Waste management : Different management strategies are used for developed and developing countries, cities and villages etc. Similarly different management are needed to manage e-waste, radioactive waste or solid liquid or gaseous waste. There has been remarkable progress in the field of science and technology during last century, but this progress has been made trivial by the ever increasing amount of waste in cities. An ecofriendly development can only be regarded as true development. Therefore, there is an urgent need to reinforce the concept of "Wasteless development" Shivraman committee which was constituted in 1975 for waste management, gave important suggestions and guidelines, which are being followed.

We must realise that waste management is not sole responsibility of government, the role of common man, various NGOs and all is equally important. Waste management can be done effectively by sticking to the principle of 3R (reduce, reuse, and recycle).

Methods of waste management

(i) Separation of biodegradable and non-biodegradable waste right at its source/at domestic level.

(ii) Arrangement of separate bins for different types of waste.

(iii) Use of biodegradable waste in making compost/vermicompost.

(iv) Establishment of adequate number of sewage treatment plants and their proper maintenance.

(v) Correct disposal of solid waste.

In addition to above mentioned point following strategies are also applied :

(a) Landfill : Collection of solid waste away from the cities in a low lying area.

(b) Incineration : Best method of hospital waste disposal in which the waste is burnt to ashes.

(c) Recycling : This is one of the best method of disposal of waste paper, cardboard, glass, plastic metals etc. to re-obtain the resources.

(d) Chemical process : By this method the waste is either made reusable or destroyed, for example

Making brick like construction material from waste, and generating power (electricity) from waste.

(e) A change in mind set, attitude and behaviour is also essential for effective waste management.

Q.19. Write an essay on the sources of waste.

Ans. Sources of waste : There are many source of waste, the important ones are :

(A) Domestic sources : Many types of waste are generated in houses due to daily cleaning and other day to day activities. These include biodegradable waste like peels of fruits and vegetables, used tea leaves, paper, stale food and non-biodegradable waste like plastic, polythene, glass, aluminium cans etc.

(B) Municipal waste : This waste include solid wastes generated from houses, shops, offices, school-colleges and hospitals etc. These waste are collected and disposed off by municipality.

Sewage is a liquid municipal waste. At many place it is directly discharged into a river without any treatment, which is one of the main cause of water pollution.

Day by day increasing amount of solid waste and its disposal is one of the main global environmental issue.

(C) Industrial and mining waste.

Different type of solid, liquid and gaseous waste are released into the environment from various industries. These waste have heavy metals, synthetic organic substances, acidic substances, alkaline substances, oily substances, inflammable substances, fly ash, chloride, phosphate etc.

Mineral particles of various sizes containing calcium carbonate, asbestos, some metals, soil and released from different types of mines and stone quarrying.

(D) Agriculture : Biodegradable waste is generated in agricultural activities. These include stalk, straw, branches, dried leaves etc. the pesticied residue affect fertility of the soil adversely.

(E) Medical : Medical waste is one of the most dangerous type of waste. It includes bandages, plaster, syringe tubes, glass and plastic bottles, blood, pus, tissues, many pathogens etc.

Q.20. Make a list of different types of waste of your surroundings and classify them.

Ans. List of waste material fo our surrounding and their classification

Waste material	Biodegra-dable	Non-biode gradable
Torn paper	✓	
Toothpaste tube, cream pack		✓
Cardboard boxes	✓	
Empty milk packet		✓
Rappers of biscuit		✓

Pencil shaving	✓	
Peels of fruits vegetables	✓	
Used polythene		✓
Broken toys (plastic)		✓
Plastic soft drink bottle		✓
Plastic cup		✓
Rappers of toffee		✓
Stale food	✓	
Waste of construction site		✓
Bucket, mug (broken)		✓
Mobile battery		✓
Broken glass		✓
Leather shoes	✓	
Water bottle		✓
Earthen pot, <i>kulhad</i>	✓	

Q.21. What would you do for waste management in your colony/mohalla or village?

Ans. Waste management at the level of Mohalla/colony or village

(i) Collecting information about the type and amount of waste generated by each unit/house of the colony.

(ii) Making a master plan of waste management with the officials of gram panchayat or Mohalla.

(iii) To make each and every individual of the village aware about the need of waste management. To make them aware about the basic **mantras** of waste management reduce, reuse and recycle.

(iv) To spread awareness organise slogan writing, seminar distribution of pamphlets, road show etc.

(v) To get article (about waste management) published in daily newspapers.

(vi) Keeping separate bins for biodegradable and non biodegradable waste, in homes, offices. To motivate the people to do so.

(vii) Making compost/vermicompost from biodegradable waste.

(viii) Separation of plastic, glass and metallic waste item and their recycling.

(ix) Making paper mache items from old newspapers, torn papers etc.

(x) Use of a cloth bag instead of polythene bag.

(xi) Motivating classmate and friends to become a responsible citizen.